

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 01-175250

(43)Date of publication of application : 11.07.1989

51)Int.Cl.

H01L 23/50

(21)Application number : 62-335473

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(22)Date of filing : 28.12.1987

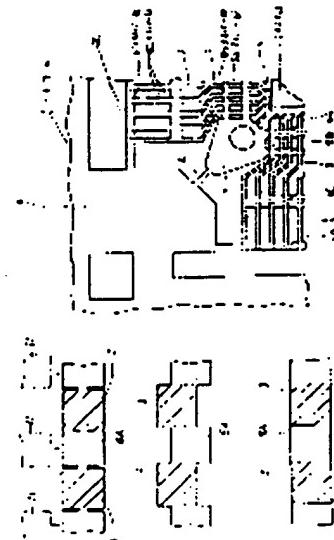
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## (54) LEAD FRAME AND SEMICONDUCTOR DEVICE USING IT

### (57)Abstract:

**PURPOSE:** To prevent a punch from being worn away by a method wherein a tie-bar part is pushed out from one side face without being stamped completely, its one part is cut and said pushed-out part is shaped by being pushed back from the other side face so that the tie-bar part can be separated and removed, e.g., by being pressed comparatively slightly by using the punch.

**CONSTITUTION:** A square die pad 2 is arranged in the central part of a lead frame 1; support bars 4 are stretched in diagonal directions from its four corners; tip parts are shaped collectively together with a lead frame disk 1a; intermediate parts act as reinforcing sheets 5. Ends of lead parts 3 face side edges of the die pad 2; tie-bar parts 6AW6D are shaped in parallel in such a way that intermediate parts or end parts of the lead parts 3 are interlinked with one another. The tie-bar parts 6AW6D are pushed out by about one-third by using a metal mold when the lead frame is formed; then, when they are pushed back to original positions, the intermediate parts are not cut; both upper parts and lower parts are cut. A chip is fixed to the die pad 2; wires are bonded to the lead parts 3; a resin is molded. After the resin has been solidified, prescribed tie-bar parts are pressed slightly by using punches 11, and leads 3W3 can be separated easily.



### LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the

examiner's decision of rejection or application

converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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